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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,121	09/26/2003	Chia-Pin Chiu	884.465US2	7747

21186 7590 04/04/2007  
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
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MINNEAPOLIS, MN 55402

EXAMINER
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DUONG, THO V

ART UNIT	PAPER NUMBER
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3744

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/672,121	<b>Applicant(s)</b> CHIU ET AL.	
	<b>Examiner</b> Tho v. Duong	<b>Art Unit</b> 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 1/11/07 have been fully considered but they are not persuasive. Applicant's argument that reference to Web fails to disclose a distribution of carbon fibers suspended within a matrix material (claim 1) and the fibers are suspended with a substantially random orientation in three dimensions or movable upon flow of the matrix material, has been very carefully considered but is not found to be persuasive. Web discloses (figures 2 and 3) that the carbon fibers of woven or matted or felted fabric made from shards, are well embedded within the matrix material (16), wherein the matrix material is a liquid such as oil. It is inherently that carbon fibers are suspended within the liquid since the fibers are not rigidly attached to the liquid. Regarding the limitation of random orientation in three dimensions and movable fibers upon flow of matrix material, the fact that carbon fibers of Web located within a pool of liquid gives the fibers the freedom of movement or orientation in any direction within the liquid since, again the fibers are not rigidly attached to the liquid.

Furthermore, applicant's argument against the 112<sup>th</sup> 1<sup>st</sup> paragraph rejection, has been very carefully considered but is not found to be persuasive. The subject matter of a non-curable viscous matrix material, is still not found on page 8, lines 24-30 (cited by the applicant) or any part of the specification. If applicant believes that the composition of silicon grease or oil alone can convey the conclusion non-curable viscous matrix material, applicant will be advised to see Endo et al as an evidence (US 2007/0042533A1, paragraph 1) that the silicon grease can also be cured. Furthermore, the subject matter that the orientation and location of carbon fibers relative to each other are movable upon flow of matrix material, is still not found on page 9, lines 8-19

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and figure 5 (cited by the applicant) or any part of the specification. Regarding the if statement of the applicant to support the claimed subject matter, the examiner is not persuasive because the thermal conduction material can be still reduced in thickness by just moving the matrix material thickness without moving the carbon fibers.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8 and 13-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter of “non-curable viscous matrix” and “a distribution of carbon fibers within the viscous matrix material wherein orientation and location of carbon fiber relative to each other are movable upon flow of the matrix material” are not supported by the original disclosure. There is no description of the claimed subject matter in the original disclosure.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Webb (US 6,542,371). Webb discloses (column 2, lines 28-column 3, line 7) an electronic system that has a thermal interface material comprising a viscous matrix such as silicon oil thermal grease mixed with carbon fibers and thermally conductive particles such as aluminum or copper. Regarding to the limitations that has been rejected under 1<sup>st</sup> paragraph, Webb discloses (column 4, lines 12-26 and column 5, lines 9-50) that the matrix material is silicon oil, which is the same material as claimed. Therefore, it is capable of being a non-curable viscous matrix material as claimed. Furthermore, with respect to a distribution and location of carbon fibers relative to each other are movable upon flow of the matrix material and suspending a number of carbon fibers with a substantially random orientation in three dimension within the non-adhesive viscous matrix material, can be found in (column 4, lines 12-26; lines 42-65 and column 5, lines 9-50). Specifically, Web discloses that the matrix material (16) is a liquid substance and the carbon fibers can be that the carbon fibers of woven or matted or felted fabric made from shards, are well embedded within the liquid (figures 2 and 3). It is inherently that carbon fibers are suspended within the liquid since the fibers are not rigidly attached to the liquid. Regarding the limitation of random orientation in three dimensions and movable fibers upon flow of matrix material, the fact that carbon fibers of Web located within a pool of liquid gives the fibers the freedom of movement or orientation in any direction within the liquid since, again the fibers are not rigidly attached to the liquid.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

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102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding applicant's argument of the improper of 102 (e) rejections because of common assignee, the argument is not persuasive. Applicant is reminded to see MPEP 2136.01 [R-3]( II).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ghosh (US 2002/0086600A1) discloses a thermal interface medium.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

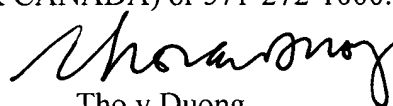
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tyler J. Cheryl can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tho v Duong  
Primary Examiner  
Art Unit 3744



TD  
March 31, 2007